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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,213	09/10/2001	Peter James Keating	T/JP/00U246US	2429

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EXAMINER

CINTINS, IVARS C

ART UNIT PAPER NUMBER

1724

DATE MAILED: 01/13/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/936,213

Applicant(s)  
Keating

Examiner  
Ivars Cintins

Art Unit  
1724



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Nov 4, 2002
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-12, 14, and 15 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14, and 15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 14 is again rejected under 35 U.S.C. 102(b) as being clearly anticipated by Curtain et al.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Curtain et al. in view of Weitzen et al., as applied in the previous Office action.

Applicant's arguments filed November 4, 2002 have been noted and carefully considered but are not deemed to be persuasive of patentability. Applicant argues, with respect to claim 14, that there is no disclosure of the crystalline-metallic-ore-fat-soluble-compound complex of the present invention in Curtain et

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al. It is pointed out, however, that this reference clearly discloses (see Example 2) contacting a brine solution containing *Dunaliella salina*, an algae rich in beta-carotene (a fat-soluble compound), with magnetite (a crystalline metallic ore) such that the *Dunaliella salina* is adsorbed onto the magnetite (see col. 2, line 60); and the product resulting from this contacting step will inherently contain a complex of crystalline metallic ore and a fat-soluble compound, as required by claim 14.

Applicant also argues that in Curtain et al. whole cells of *Dunaliella salina* are adsorbed onto the hydrophobic material, whereas in the present invention the magnetite disrupts cell membranes and absorbs beta-carotene. Again, this argument has been noted and carefully considered, but is not deemed to be persuasive of patentability. Applicant has readily admitted that magnetite is a crystalline iron ore which has a surface of sharp edges, and when *Dunaliella* cells are brought into contact with this magnetite their cell membrane will be punctured by these sharp edges (see page 6, lines 3-8 of the specification). Accordingly, the magnetite of Curtain et al. will inherently disrupt the cell membranes of the *Dunaliella salina* cells contacted therewith and sorb the beta-carotene contained therein, for substantially the same reason that Applicant's magnetite

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performs this function. In any event, since Curtain et al. discloses subjecting the same stream to the same treatment material as that in Applicant's recited process, the results obtained in both of these processes must inherently also be the same.

Applicant further argues that there is no motivation to combine the teachings of Curtain et al. and Weitzen et al. Once again, this argument has been noted and carefully considered, but is not deemed to be persuasive of patentability. It is pointed out that Weitzen et al. clearly discloses contacting a liquid to be treated with a sorbent material in a fluidized bed; and it would have been obvious to one of ordinary skill in the art at the time the invention was made to contact the brine and magnetite of Curtain et al. in the manner suggested by Weitzen et al., in order to promote contact between the magnetite and brine of this primary reference system and/or to prevent clogging of the sorbent bed in this primary reference system.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of

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the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to I. Cintins whose telephone number is (703) 308-3840. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. David Simmons, can be reached at (703) 308-1972.

The fax phone numbers for this art unit are: (703) 872-9311 for "Official" faxes after Final Rejection; (703) 872-9310 for all other "Official" faxes; and (703) 872-9492 for "Draft" and other "Unofficial" faxes.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.



**Ivars C. Cintins**  
**Primary Examiner**  
**Art Unit 1724**

I. Cintins  
January 8, 2003